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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,927	02/19/2002	Thomas Curran	SJ-01-0032	6357

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EXAMINER
STEADMAN, DAVID J

ART UNIT	PAPER NUMBER
1652	

DATE MAILED: 09/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/078,927	CURRAN ET AL.	
	Examiner	Art Unit	
	David J Steadman	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) *16-22,24 and 26-30* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15,23,25 and 31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/25/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of the Application

[1] Claims 1-31 are pending in the application.

[2] In a telephone conversation with applicants' representative, Ms. Shawn A. Hawkins, on September 09, 2004, the examiner noted that the Office action mailed June 30, 2004 listed the claims of Group I as including claims drawn to assaying for a *decrease* in Dab1 phosphorylation, *i.e.,* claims 23 and 25, and claims of Group II as including claims drawn to assaying for an *increase* in Dab1 phosphorylation, *i.e.,* claims 22 and 24. However, the examiner brought to applicants' representative's attention that this is an inadvertent error as Group I actually includes claims drawn to assaying for an *increase* in Dab1 phosphorylation and Group II actually includes claims drawn to assaying for a *decrease* in Dab1 phosphorylation. In order to clarify the record, the examiner confirmed applicants' intent to elect Group I, claims 1-15, 23, 25, and 31 for prosecution on the merits.

Restriction/Election

[3] Applicant's election with traverse of Group I, claims 1-15, 23, 25, and 31, filed July 21, 2004, is acknowledged.

[4] RESPONSE TO ARGUMENTS: Applicants argue Groups I-II fail to define methods that warrant separate examination and search as the methods of Groups I-II depend from claim 1 and allegedly utilize the same steps and products, Groups I-II have

the same classification and a search of Group I will overlap with the search of the subject matter of Group II. Applicants' argument is not found persuasive.

MPEP § 803 sets forth two criteria for a proper restriction between patentably distinct inventions: (A) The inventions must be independent or distinct as claimed and (B) There must be a serious burden on the examiner. For the reasons of record and the reasons set forth below, it is the examiner's position that a proper restriction of the claims has been made.

The inventions of Groups I-II are unrelated as the methods utilize different steps, *i.e.,* Group I includes claims drawn to a method for detecting a neurological disorder by detecting an *increase* in Dab1 phosphorylation, while Group II includes claims drawn to a method for detecting a neurological disorder by detecting a *decrease* in Dab1 phosphorylation. Also, there is no disclosure in the specification that the methods of claims 22 or 24 and 23 or 25 are capable of use together and the methods of claims 22 or 24 and 23 or 25 are claimed separately, thus providing evidence that the methods are not capable of being used together. Further, neither method would render the other obvious to one of ordinary skill in the art as one of ordinary skill in the art would not expect a neurological disorder that is detected by an increase in Dab1 phosphorylation to also be detected by a decrease in Dab1 phosphorylation. Moreover, as the claims recite different method steps that do not overlap, *i.e.,* detecting a neurological disorder by detecting an increase in Dab1 phosphorylation or detecting a neurological disorder by detecting a decrease in Dab1 phosphorylation, a separate keyword text search for each of the methods is required.

Applicants argue that Groups I-IV fail to define methods that warrant separate examination and search as the methods of Groups I-IV are fundamentally related, have the same classification, and would thus allegedly have co-extensive searches. Applicants' argument is not found persuasive.

That Groups I-II are unrelated and would require a separate search are addressed above. Regarding Groups I and III-IV, it is unclear to the examiner as to how each of these Groups is "fundamentally related" and applicants do not elaborate on this issue. It is the examiner's position that each of these methods is independent or distinct and would require a separate search at least in view of the different method steps, products, and effects of each invention as stated previously in the Office action mailed June 30, 2004.

Applicants argue the methods of Groups I-VI are all allegedly based on methods for detecting Cdk5 activity and that the antibody of Group VII can be used as a product for detecting Cdk5 activity in accordance with the methods of Groups I-VI or as a product in identifying a Cdk5 inhibitor or activator of Groups V and VI. Applicants' argument is not found persuasive.

That Groups I-IV are independent or distinct and would require a separate search are addressed above. Regarding Groups I and V-VI, for the reasons set forth in the Office action mailed June 30, 2004, the inventions of Groups I and V-VI are independent or distinct and require a separate search.

[5] The requirement is still deemed proper and is therefore made FINAL.

[6] Claims 16-22, 24, and 26-30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected inventions, there being no allowable generic or linking claim.

[7] Claims 1-15, 23, 25, and 31 are being examined on the merits.

Information Disclosure Statement

[8] All references cited in the information disclosure statement (IDS), filed March 25, 2002, have been considered by the examiner. A copy of the IDS is attached to the instant Office action.

Specification/Informalities

[9] The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested: --Assays for Detecting Cyclin Dependent Kinase 5 Activity by Measuring Disabled-1 Phosphorylation--.

Claim Rejections - 35 USC § 112, Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

[10] Claims 1-15, 23, 25, and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

[a] Claims 1 (claims 2-15, 23, and 25 dependent therefrom) and 31 are incomplete as the claims fail to set forth any method steps for determining whether Dab1 is phosphorylated (claim 1) or for determining the amount of phosphorylated Dab1 and total amount of Dab1 in a biological sample (claim 31).

[b] Claims 1 (claims 3-6, 11, and 13-14 dependent therefrom), 2, 7-10, 12, 15, 23, 25, and 31 are indefinite in the recitation of "Cdk5," "Cdk5 activity," and "Dab1." Regarding the terms "Cdk5" and "Dab1," it is unclear as to the polypeptides that meant to be encompassed by these terms. The specification defines "Cdk5" as "a protein with serine/threonine kinase activity that is structurally homologous to the mitotic cyclin dependent kinases" (p. 4) and defines "Dab1" as "an intracellular adapter protein that is phosphorylated by Cdk5 activity and by reelin tyrosine kinase activity" (p. 4). It should be noted that the specification fails to define a "reelin tyrosine kinase activity." Even in view of these definitions it is unclear as to the scope of polypeptides that are "structurally homologous to the mitotic cyclin dependent kinases" or are "intracellular adapter protein that is phosphorylated by Cdk5 activity and by reelin tyrosine kinase activity." For example, based on the definition of "Cdk5," it is unclear as to how one distinguishes a Cdk5 polypeptide from another mitotic cyclin dependent kinase or how one distinguishes a Dab1 polypeptide from other polypeptides that are considered to be intracellular adapter proteins that are phosphorylated by Cdk5 activity and by reelin

tyrosine kinase activity. Also, it is unclear as to whether the terms are meant to encompass fragments and/or variants of known Cdk5 and/or Dab1 polypeptides. It is suggested that applicants clarify the meaning of the terms "Cdk5" and "Dab1." The specification defines "Cdk5 activity" as "the ability of Cdk5 to phosphorylate a substrate, such as Dab1, tau or Nude1, on serine and/or threonine in a biological sample" and "Cdk5 phosphorylates Dab1 on serines 491 and 515" (p. 4). This term essentially encompasses the activity of any serine/threonine kinase and it is unclear as to how one distinguishes a "Cdk5 activity" from the activity of other serine/threonine kinases.

[c] Claims 1 (claims 2, 4-9, 11-15, 23, and 25 dependent therefrom), 10 (claims 12-15 dependent therefrom), and 31 are indefinite in the recitation of "a candidate sequence preferred by Cdk5 activity" as it is unclear from the claims and the specification as to those sequences that are considered to be "preferred by Cdk5 activity" and those that are not. It is suggested that applicants clarify the meaning of the claims.

[d] Claim 2 is confusing in the recitation of "the Cdk5 amino acids consisting of serine 491 and 515" as the specification indicates that serine 491 and 515 are amino acids of Dab1 that are phosphorylated by Cdk5 (see p. 3, lines 11-13). It is suggested that applicants clarify the meaning of the claim.

[e] Claims 2 and 12 (claim 25 dependent therefrom) are unclear in the recitation of serine 491 and 515 as there is no reference sequence, *e.g.*, a sequence identifier, recited in the claims to identify serine residues that are considered to be at positions

491 and 515. It is suggested that, for example, applicants provide a reference sequence such that one of skill in the art could identify serine at position 491 and 515.

[f] Claim 3 is confusing as the sequences of SEQ ID NO:1 and 2 are recited as "tryptic peptides," however, the method of claim 1 recites "wherein phosphorylation of Dab1... ...indicates the presence of active Cdk5." It is unclear from the claims and the specification as to whether the method of claim 3 measures Cdk5 activity by determining phosphorylation of a Dab1 polypeptide or the recited tryptic fragments thereof. Based on the definition of Dab1, it does not appear that either of SEQ ID NO:1 or 2 is considered to be a Dab1 polypeptide. Thus, it is unclear as to how the tryptic peptides as recited in claim 3 are equivalent to Dab1 for detection of "phosphorylation of Dab1" as recited in claim 1. It is suggested that applicants clarify the meaning of the claims.

[g] Claims 4-6 are unclear in the recitation of "derived from." The meaning of the term is unclear from the claims and the specification. In the interest of advancing prosecution, the term has been interpreted as "isolated from." It is suggested that applicants clarify the meaning of the term.

[h] Claim 11 is confusing in the recitation of "contains a phosphate group on serine 491" as SEQ ID NO:3 has only 14 amino acids and it is unclear as to how a 14-amino acid sequence has a serine at position 491.

[i] Claim 31 is unclear in the recitation of "wherein the proportion of Dab1 which is phosphorylated on said candidate sequence represents a quantitative measure of the level of Cdk5 activity." It is unclear from the claims and the specification as to how one

converts "the proportion of Dab1 which is phosphorylated" into a "quantitative measure of the level of Cdk5 activity." It is suggested that applicants clarify the meaning of the claim.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

[11] Claims 1-15, 23, 25, and 31 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or well-established utility. Claims 1-15 are drawn to a method for detecting Cdk5 activity in a biological sample. Claims 23 and 25 are drawn to methods for detecting neurological disorders. Claim 31 is drawn to a method for quantitating the level of Cdk5 activity.

The specification discloses that Cdk5 is a serine/threonine kinase that is associated with neuronal development (pp. 1-3). The specification suggests a nexus between Cdk5 activity and/or level and a disease state, *e.g.*, [u]nregulated Cdk5 activity... ...has been implicated in the pathology of neurodegenerative disorders, such as Alzheimer's disease." However, there is no evidence in the specification that links Cdk5 activity or level with a specific disease or disorder, particularly a neurological disorder, such that one could use the methods for detection of a particular disease state or disorder. Further, the specification fails to provide guidance as to a specific neurological disorder that can be detected by increased Cdk5 activity or a correlation of

a specific neurological disorder with increased Cdk5 activity. In this case, the specification fails to provide the guidance necessary for a "real world" use of the claimed methods. One of skill in the art would recognize that further experimentation is required to identify a "real world" use for the claimed methods. See Brenner v. Manson, 383 U.S. 519, 148 USPQ 689 (Sup. Ct. 1966). The specification must teach a skilled artisan how to use what is claimed and not merely provide a blueprint for further experimentation in order for an artisan to identify a use for the claimed invention. As stated in Brenner v. Manson, 383 U.S. 519 535-536, 148 USPQ 689, 696 (1966), "[a] patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion."

[12] Claims 1-15, 23, 25, and 31 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well-established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 112, First Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

[13] Claims 1-15, 23, 25, and 31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contain subject

matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1-15 are drawn to methods for detecting the activity of a genus of Cdk5 polypeptides by determining whether a genus of Dab1 polypeptides has been phosphorylated, and optionally wherein the method uses a genus of antibodies that bind to phosphorylated Dab1 or the method is used for detecting neurological disorders. Claims 23 and 25 are drawn to methods for detecting neurological disorders using the method of claim 1 or 12. Claim 31 is drawn to a method for quantitating the level of activity of a genus of Cdk5 polypeptides by determining the amount of a genus of phosphorylated Dab1 polypeptides.

For claims drawn to a genus, MPEP § 2163 states the written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species by actual reduction to practice, reduction to drawings, or by disclosure of relevant, identifying characteristics, *i.e.*, structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus. MPEP § 2163 states that a representative number of species means that the species which are adequately described are representative of the entire genus. Thus, when there is substantial variation within the genus, one must describe a sufficient variety of species to reflect the variation within the genus. Regarding the

genus of Cdk5 and Dab1 polypeptides, the specification discloses only three representative species of Cdk5 polypeptides, *i.e.,* human Cdk5 having GenBank accession number 4826674, mouse Cdk5 having GenBank accession number 6680907, and rat Cdk5 having GenBank accession number 203389 and the specification discloses only three representative species of Dab1 polypeptides, *i.e.,* human Dab1 having GenBank accession number 3288851 and mouse Dab1 having GenBank accession number 1771281. The specification fails to describe any additional representative species of the recited genus of Cdk5 or Dab1 polypeptides, which encompasses mutants and variants of known Cdk5 and Dab1 polypeptides and wild-type and mutant sequences from any organism – including those that have yet to be identified. Thus, the genera encompass widely variant species with respect to structure.

Regarding the genus of recited antibodies, the specification discloses only a single representative species of the genus of recited antibodies, *i.e.,* a phosphoserine antibody generated against SEQ ID NO:3 with a phosphorylated serine at position 8. The specification fails to describe any additional representative species of the recited genus of antibodies. While MPEP § 2163 acknowledges that in certain situations "one species adequately supports a genus", it is also acknowledges that "[f]or inventions in an unpredictable art, adequate written description of a genus which embraces widely variant species cannot be achieved by disclosing only one species within the genus". In the instant case, the recited genus of antibodies encompasses species that are widely variant. As such, the disclosure of the single representative species of antibodies is insufficient to be representative of the attributes and features of *all* species

encompassed by the recited genus of antibodies. Given the lack of description of a representative number of Cdk5 and Dab1 polypeptides and antibodies, the specification fails to sufficiently describe the claimed invention in such full, clear, concise, and exact terms that a skilled artisan would recognize that applicant was in possession of the claimed invention.

[14] Even if applicant demonstrates the claimed methods have a specific and substantial or well-established utility, the following rejection still applies. Claims 1-15, 23, 25, and 31 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method for detecting the presence of Cdk5 kinase activity by immunoprecipitating human Dab1 having GenBank accession number 3288851 or mouse Dab1 having GenBank accession number 1771281 from a biological sample with or without Cdk5; contacting the immunoprecipitated Dab1 with a phosphoantibody, generated using SEQ ID NO:3 with a phosphorylated serine at position 8 as an antigen; detecting binding of the phosphoantibody to serine 491 and/or 515 of Dab1, wherein increased binding of the phosphoantibody to serine 491 and/or 515 of Dab1 in a biological sample with Cdk5 as compared to a sample without Cdk5 indicates the presence of Cdk5 kinase activity in said sample, does not reasonably provide enablement for the broad scope of claimed methods. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

It is the examiner's position that undue experimentation would be required for a skilled artisan to make and/or use the entire scope of the claimed invention. Factors to

be considered in determining whether undue experimentation is required are summarized in *In re Wands* (858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988)) as follows: (A) The breadth of the claims; (B) The nature of the invention; (C) The state of the prior art; (D) The level of one of ordinary skill; (E) The level of predictability in the art; (F) The amount of direction provided by the inventor; (G) The existence of working examples; and (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure. See MPEP § 2164.01(a). The Factors most relevant to the instant rejection are addressed in detail below.

- The claims are overly broad in scope: Regarding claims 1-15, the claims are so broad as to encompass a method for detecting any Cdk5 activity in a biological sample by determining whether any Dab1 protein is phosphorylated on any sequence that is "preferred" by Cdk5 by any method or technique for detecting Dab1 phosphorylation. Claims 23 and 25 are so broad as to encompass methods of detecting any neurological disease by measuring an increase in Cdk5 activity. Claim 31 is so broad as to encompass a method for quantitating Cdk5 activity in a biological sample by determining the amount of Dab1 that is phosphorylated on a sequence that is "preferred" by Cdk5, wherein the proportion of phosphorylated Dab1 to the total amount of Dab1 represents a quantitative measure of Cdk5 activity. The broad scope of claimed methods is not commensurate with the enablement provided by the disclosure with regard to the extremely large number of Cdk5 polypeptides, Dab1 polypeptides and Cdk5 "preferred" sequences thereof, methods/techniques for detecting phosphorylation

and quantitatively measuring Cdk5 activity. In this case the disclosure is limited to a method for detecting the presence of Cdk5 kinase activity by immunoprecipitating human Dab1 having GenBank accession number 3288851 or mouse Dab1 having GenBank accession number 1771281 from a biological sample with or without Cdk5; contacting the immunoprecipitated Dab1 with a phosphoantibody, generated using SEQ ID NO:3 having a phosphorylated serine at position 8 of SEQ ID NO:3 as an antigen; detecting binding of the phosphoantibody to serine 491 and/or 515 of Dab1, wherein increased binding of the phosphoantibody to serine 491 and/or 515 of Dab1 in a biological sample with Cdk5 as compared to a sample without Cdk5 indicates the presence of Cdk5 kinase activity in said sample.

- The lack of guidance and working examples: The specification provides only a single working example of the method of claims 1-15, *i.e.,* the method set forth at pp. 21-22 of the specification. Other than this single working example, the specification fails to provide guidance as to whether Dab1 from all sources has the ability to phosphorylate Cdk5 from a corresponding source, fails to teach those candidate sequences that are "preferred" by Cdk5 from any source, and further fails to provide guidance regarding all methods that can be used to detect Cdk5 phosphorylation of Dab1. The specification fails to provide even a single working example of the methods of claims 23, 25, and 31 and fails to provide any guidance regarding those neurological disorders that can be detected by measuring an increase in Cdk5 activity.

- The high degree of unpredictability in the art: The specification fails to provide guidance regarding the relationship of Cdk5 and Dab1 proteins from other sources and

it is highly unpredictable as to whether Cdk5 phosphorylates all Dab1 proteins, including those Dab1 proteins having sequences that vary from those that are disclosed in the specification. It is possible that Dab1 from other sources does not comprise a Cdk5 "preferred" sequence or that the antibody generated against SEQ ID NO:3 would not recognize phosphorylated Dab1 from other sources, or would recognize a phosphorylated form of Dab1 that is phosphorylated by a kinase other than Cdk5. Further, the ability to detect phosphorylation of a protein by a *specific* kinase by any method is highly unpredictable. Regarding claims 23 and 25, in view of the lack of guidance regarding a correlation of increased Cdk5 activity and a neurological disorder, it is highly unpredictable as to whether an increased level of Cdk5 activity is related to any neurological disorder. Regarding claim 31, in view of the lack of guidance, it is highly unpredictable as to whether one can use the claimed method for *quantitative* measure of Cdk5 activity.

- The amount of experimentation required is undue: It is not routine in the art to screen proteins from all sources to determine whether such proteins will be specifically phosphorylated by a kinase and to determine all methods of detecting specific phosphorylation thereof. Regarding claims 23 and 25, it is not routine to determine which – if any – neurological disorders can be detected by an increase in Cdk5 activity, and, if so, what level activity is sufficient to indicate a neurological disorder. Regarding claim 31, in view of the lack of even a single working example of the claimed method, one of skill must first determine whether the claimed method can be used for

quantitative measure of Cdk5 activity, and if so, establish the details required to quantitatively measure Cdk5 activity.

In view of the overly broad scope of the claims, the lack of guidance and working examples provided in the specification, the high degree of unpredictability, and the amount of experimentation necessary to practice the full scope of the claims, undue experimentation would be necessary for a skilled artisan to make and use the entire scope of the claimed invention.

Thus, applicant has not provided sufficient guidance to enable one of ordinary skill in the art to make and use the claimed invention in a manner reasonably correlated with the scope of the claims. The scope of the claims must bear a reasonable correlation with the scope of enablement (*In re Fisher*, 166 USPQ 19 24 (CCPA 1970)). Without sufficient guidance, determination of having the desired characteristics is unpredictable and the experimentation left to those skilled in the art is unnecessarily, and improperly, extensive and undue. See *In re Wands* 858 F.2d 731, 8 USPQ2nd 1400 (Fed. Cir, 1988).

Conclusion

[15] Status of the claims:

- Claims 1-31 are pending.
- Claims 16-22, 24, and 26-30 are withdrawn from further consideration.
- Claims 1-15, 23, 25, and 31 are rejected.
- No claim is in condition for allowance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Steadman, whose telephone number is (571) 272-0942. The Examiner can normally be reached Monday-Friday from 6:30 am to 4:00 pm. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Ponnathapura Achutamurthy, can be reached at (571) 272-0928. The FAX number for submission of official papers to Group 1600 is (703) 872-9306. Draft or informal FAX communications should be directed to (571) 273-0942. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Art Unit receptionist whose telephone number is (703) 308-0196.

David J. Steadman, Ph.D.
Primary Examiner
Art Unit 1652
09-14-04